Attorney Docket No.: 979-042

IN THE UNTIED STATES PATENT AND TRADEMARK OFFICE

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In re application of
Pinto — Examiner: Jill Gray

Serial No: 10/719,698 — Art unit: 1774

Filed: November 21, 2003

For: FLAME RETARDENT CABLE

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AFFIDAVIT UNDER 37 CFR 1.132 TO TRAVERSE REJECTION OF EXAMINER

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Dear Sirs:

1) I, Olivier Pinto, having a home address of 6 Rue Pravaz, 69003 Lyon, France, hereby presents the following statements in support of the patentability of the claims of the present application.

2) My qualification in the field of chemical engineering and polymer compositions are as follows:

MS in Chemistry and Chemical engineering

Research experience & technological fields:
Functional silicone polymers synthesis and formulation, radiation curable coatings development, photochemistry - Senior polymer scientist 1997-2001 / Rhodia Silicones, Inc.
Polymer chemistry, extrusion process, fire retardant compounds, polymer crosslinking technologies - Technology group leader 2001-present / Nexans Research Center

List of granted patents and published applications:
US6548568 (B1)-RADIATION-CURABLE RELEASE COMPOSITIONS, USE THEREOF AND RELEASE COATED SUBSTRATES
WO2004072707-OPTICAL FIBRE RIBBON AND PRODUCTION METHOD THEREOF
FR2855188-Manufacturing process for plastic optical fiber with variable refraction index includes stage with virtually no flow of ingredients along preform maker
WO2004104640-PHOTO-CROSSLINKABLE LIQUID COMPOSITION FOR PLASTIC OPTICAL FIBRE
EP1594143 (A1)-THERMO-ADHERENT COMPOSITION FOR COIL WIRES
WO2006027524-ENAMELLING VARNISH COMPOSITION, SUCH AS FOR A MAGNET WIRE
WO2004104101 (A1)-Composition containing thermoplastic polymer and hardenable resin, used for the production of heat-resistant, adherent coatings on electrical conductors, e.g. stator windings or power cables
US6859593 (B2)-Production of optical fiber ribbons for use in telecommunication cables involves forming groups of fibers, coating with resin, applying an envelope resin coating and hardening both coatings together by UV irradiation
US2006275605-Handling cable for power supply and/or signal transmission
EP1424703 (A1)-FLAME-RETARDANT CABLE MADE OF MATERIAL INCLUDING AT LEAST ONE PHOSPHOROUS GROUP

3) To acquaint myself with issue at hand, I have reviewed the current application, pending claims and the references cited by the Examiner, and in particular the Ogawa reference (U.S. Patent No. 4,417,018).

4) To further acquaint myself with the current rejection, I have read the Examiner's current Office Action dated September 8, 2006, along with the Examiner's Response To Argument on Page 2, in particular with regards to the cited Ogawa reference.

5) It is my understanding that the Examiner has rejected claims 1--20 as being obvious over Hasegawa (U.S. Patent No. 6,755,995) in view of the Ogawa reference (U.S. Patent No. 4,417,018), and in particular columns 9 and 10 of Ogawa which Examiner is using to support a rejection, contending that such teachings show a phosphorus group "chemically bonded to said polymer."

6) To my knowledge, the present application includes one independent claim which, as of the latest Amendment, reads as follows:

> 1. A flame-retardant cable comprising:
> a transmission element;
> a flammable element; and
> a flame-retardant coating layer of cross-linkable resin surrounding said flammable element, wherein said flame-retardant layer includes a polymer obtained from a polymerizable liquid composition, and wherein said polymerizable liquid composition contains at least a precursor for said polymer, the precursor including functional groups selected from the group consisting of acrylates, methacrylates, epoxies, vinyl ethers, allyl ethers, and oxetanes,
> wherein said polymerizable liquid composition also includes at least one phosphorous group such that said phosphorus group is chemically bonded to said polymer.

7) Among other elements, this claim includes the element that polymerizable liquid composition also includes at least one phosphorous group such that said phosphorus group is chemically bonded to said polymer.

8) The Examiner's interpretation of the Ogawa reference in support of his argument that the phosphorus group is "chemically bonded" to the polymer is incorrect.

9) The recitation of the first element being chemically bonded to a second element has a specific meaning in the field of polymer composition, namely that the phosphorus group is chemically bonded to the polymer by some form of covalent bond.

10) Based on my understating of chemical engineering, and in particular polymer compositions, two combined elements that include a bonded structure require certain parameters in order to formulate such a bond.

11) For example, in the present situation the phosphorus group is a group chemically bonded to the larger polymer structure. As in all chemical reactions resulting in covalent bonding, such bonding is a result of a set of minimum formulation parameters including at least certain concentrations of reactants, as well as time and heat of reaction, all of which are necessary to form the chemical bond. This bonding would be considered inherent in a situation where a first group (phosphorus group) is a "function group" of a second element (the polymer). See Example 2.

12) I have reviewed the Ogawa reference, and in particular columns 9 and 10, and have concluded that the Ogawa reference does not teach a phosphorus group chemically bonded to the polymer within any reasonable definition of the term chemically bonded.

13) For example, column 9, lines 34-38 state: "To improve other properties, furthermore, the flame retardant resin composition of the present invention ***can be blended with a variety of additives***." (emphasis added) Furthermore the related lines 52-55 of column 9 state: "In addition to organic halogen compounds, it is also allowable to add phosphorous compounds such as red phosphorus and amide phosphonate which serves as a flame retardant."

14) From this language, and the related language in columns 9 and 10, it is clear that the phosphorus compound being added as an additive is simply being placed in the polymer as a mixture component not for the purposes of being chemically bonded to the polymer. This is evident as there is no bonding suggested, nor is their any parameters provided to suggest chemical bonding such as the concentrations required, catalysts for bonding, heat necessary for the reaction etc...

15) Further in support of this interpretation, as an expert in flame retardant compounds used in polymers, it is well known that phosphorus compounds such as red phosphorus may be added to increase fire resistance properties. This addition is widely known in the polymer industry, particularly related to wire coatings. This addition is and has been know as a mixture of phosphorus and does not include the chemical bonding of the phosphorus to the polymer.

16) The Examiner suggests that even though the phosphorus is simply mixed a few of the molecules of the phosphorus likely bind to the polymer. However, this is not the case. Absent the necessary conditions, of which there are non-disclosed in the Ogawa reference, there is ***no*** chemical bonding at all between the polymer and the mixed phosphorus additive.

17) Based on the above, It is my opinion as an expert in polymer Chemistry, that the Ogawa reference does not teach or suggest the phosphorus group being chemically bonded to the polymer.

I declare that all statements made above of my own knowledge are true and all statements made on information and belief are believed to be true; and these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Olivier PINTO

January 29, 2007